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Phronesis, praxis and autotelic acts in physical education teaching

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Abstract

Inspired by theory from research on professions and literature, wherein Aristotelian perspectives on professional knowledge are examined, a student's narrative of social exclusion in physical education (PE) class in upper secondary school is used to discuss a theoretical issue of what characterizes teachers' professional practice that result in a positive change as experienced by this student. The student told that the teacher helped her so that she started participating in the PE classes and experienced constructive learning processes after being excluded socially in the class. The analysis reveals that the student's story implies a narrative about a teacher's autotelic acts, as well as phronesis and praxis. Autotelic acts are closely connected to phronesis and praxis, which are Aristotelian concepts. Professional knowledge and practice that includes phronesis and praxis, means the ability to promote what is good for each individual and make wise choices of actions, but not only for a teacher him- or herself. Phronesis and praxis are here understood as moral and intellectual "goods", which are fundamental for moral awareness in a disposition to do the right things in the right place and time and in the right way for the student in the PE teaching. These acts are autotelic. Moreover, a closer look is taken at the knowledge base for professional practice in PE to substantiate phronesis, praxis and autotelic acts. Here it is argued that practical synthesis is constructivist for in-depth discussions on phronesis, praxis and autotelic acts. It avoids reductionist effects, opens up the discussion and gives additional fruitful directions for further research on these Aristotelian perspectives on professional knowledge in PE.

Key words: physical education, teaching, professional knowledge, phronesis, praxis, practical syntheses, school, autotelic acts

Introduction

In an interview study of students' experiences of physical education (PE) in upper secondary school, one of the students stated that she was socially excluded in PE classes. Sandra, the name we have chosen for her here, told us that she felt uncomfortable in her class and generally in PE classes. The social exclusion that pressed her out into the cold occurred over a long period of time. She said that "mean glances" from other students and being "snickered at and frozen out" were "terrible" experiences. Sandra stated that the social environment in her class was at first good in the first year in upper secondary school. However, she felt that it changed. Some students started to bully some of the others. There were "some who were in control, and friends or mates did not blow the whistle, so they just carried on," Sandra said. First, a girl in the class was bullied. But she moved to another school, and then "they found a new victim – and that was me," she stated. In this context, Sandra reflected: "It was not fun to be in PE and be laughed at". She struggled with this throughout the entire first school year in upper secondary school and was much absent from PE. She skipped classes and stayed at home to escape from school.

However, she had a good dialogue with the PE teacher during this period. The teacher was "really, really helpful", she said, and added that she felt that the PE teacher understood her situation and played a major part in her coming to the classes she actually attended. Sandra stated that the teacher's way of acknowledging her was good support for her and she experienced a constructive educational approach from the teacher. She said that the teacher contributed to gradually improving the social environment in the PE classes, and she gained a positive view of PE in spite of difficulties and uncomfortable previous PE experiences.

Sandra's story inspired us to look more closely at teachers' professional practice, which impacts students in difficult social situations in PE classes. Sandra did not tell more exactly what the teacher did in the teaching situations, but she said that the teacher communicated with her in a positive way and indicated that the teacher adjusted the learning activities and social environment for her in the PE classes. What kind of pedagogical actions taken by the teacher may lead to a positive effect on a student's situation such as Sandra's? The teacher's actions contributed to changing her uncomfortable feeling of being socially excluded so that she started participating in the PE classes and experienced constructive learning processes. In general, social exclusion is a painful experience and threatens a student's fundamental needs. Students, who are socially excluded, experience less fulfillment of fundamental needs of belonging, self-esteem, control, and meaningful existence (Phundmair, et al., 2015). The study is also inspired by research that suggests that care and phronesis attributes are important candidates for

pinpointing the character or personality of good teachers and coaches who facilitate good learning processes and well-being for students and athletes in PE and sport (Owens & Ennis, 2005; Jones, 2017; Andersson, Öhman & Garrison, 2018; Chronin & Armour, 2017; Gano-Overway & Guivernau, 2014; Standal & Hemmestad, 2010). They appear to provide at least a partial explanation for the non-technical qualities teachers and coaches need to act and respond when exercising their roles, for example helping students who have social problems in PE classes. Caring involves fine-grained, individual, particular, context-sensitive virtuous *acts* (Jones, 2017). It requires that the teacher understands the student he or she cares for, comprehends the student's reality and by caring demonstrates an understanding of the student's situation.

The interest of the study also stems from research on professional knowledge in PE. Professional knowledge in PE has been explored by earlier research, such as Graber (2001), Rovegno, (2003), Tsangaridou (2006), Ayvazo & Ward (2011), Quennerstedt & Maivorsdotter (2017) Parker & Patton (2017), but there are few in-depth discussions on the context-sensitive virtuous acts when it comes to the different situations a teacher encounters in his or her practice. For example, teachers' ability to pedagogically adapt content to for example students' diverse abilities has been examined (Ayvazo & Ward, 2011), but there are few studies that explore in depth standards in the teacher's professional practice that exceed – or is in between - the teacher's pedagogical, content, pedagogical content and curriculum knowledge. Based on Sandra's statements and inspired by research on care and phronesis in PE teaching, we raise two theoretical issues in relation to Sandra's narrative: 1) What characterizes teachers' professional practice, which lead, or may lead, to the type of change that Sandra experienced, and 2) why are heterotelic and in particular autotelic acts fruitful concepts in relation to such professional practice that Sandra reflected in her interview? When we discuss the first issue we use knowledge concepts from Greek antiquity; *techne* and *phronesis*, and *poiēsis* and *praxis*. Furthermore, we elaborate on heterotelic and autotelic acts in PE teaching, which we propose in relation to *techne* and *phronesis*. To substantiate heterotelic and autotelic acts we take a closer look at the knowledge base for professional practice in PE and we argue that professional knowledge in PE moves along a continuum between theory and practice. Before we do this, we will relate the study to professional knowledge categories in PE research literature and comment on the interview with Sandra to clarify how we used Sandra's story in the study.

Knowledge categories in research literature

In earlier research literature, professional knowledge in PE refers to the teacher's pedagogical knowledge, content knowledge, pedagogical content knowledge and curriculum knowledge (Graber, 2001). These knowledge categories are focused on the teaching practice of PE teachers and stem from Shulman's categorization of the general concept "teacher knowledge" (Shulman, 1986). Shulman's knowledge categories are pedagogical knowledge, content knowledge, pedagogical content knowledge, curriculum knowledge, knowledge about the learning capacities of students and knowledge about the cultural, organizational and political context and value anchoring of the teaching, including historical and philosophical areas. Rovegno (2003) has elaborated on the complexity of professional knowledge in PE, seeing that this is primarily due to the fact that the teaching practice in essence is a complex professional work. Rovegno claims that teachers have tasks that demand content and pedagogical content knowledge, and there are many considerations and decisions to be made, often at a moment's notice, about the goals, content, ways of working and other teaching factors. Amade-Escot (2000) and Ward (2009) share Rovegno's conceptualization of pedagogical content knowledge and focus on the practice of teaching and the transformation of content knowledge by the teacher into meaningful knowledge for student learning (Ward & Ayvazo, 2016). Moreover, intuitive characteristics, flexibility and the ability to improvise are necessary talents in many situations, according to Rovegno (2003). The teacher is also involved in many social interactions in the teaching. Problems arising in a teaching situation may often be difficult to anticipate, describe and understand because the causes are complex and not easily discernible. Thus it is rarely meaningful to discuss linear relationships between problems in the teaching and how to solve them, Rovegno claims. Neither are there ready-made recipes that can be applied in social interactions with students.

Rovegno and other scholars, who have examined knowledge categories (for example Iserbyt, Ward & Li, 2017; Sutherland, Stuhr & Ayvazo, 2016; Ward, Ayvazo & Lehwald, 2014; Creasy, Whipp & Jackson, 2012; You, 2011; McCaughtry, 2004) indicate in other words that there are something *in between* the professional knowledge categories. Rovegno also argues that professional knowledge is personal knowledge. This means that the knowledge reflects the individual teacher's work biography, perceptions and experience, including experiences from professional practice. Teachers' professional knowledge is moreover different and unique for each teacher, as it is difficult to envision that two teachers would have identical work

biographies, values, perceptions and not least subject and social experiences from their practice in the profession.

Previous research in PE has also argued that if a teacher develops *pathic knowledge* this will help him or her to be attuned to the experiential dimensions of students in pedagogical situations in PE classes and to give assistance to them (Standal, 2015). In brief, pathic knowledge is a form of intersubjective relationship between teacher and student, and is, as the term suggests, knowledge related to sympathy and empathy. Pathic knowledge in PE is based on the student's experiences in teaching situations and the implications these experiences have for the teacher's pedagogical work. Moreover, research provides insight into teacher qualities that give the student the feeling of being seen and acknowledged in a positive way in PE classes (Lyngstad, Bjerke & Lagestad, 2019; Lagestad, Lyngstad & Bjerke, 2019). The feeling of being seen is achieved through being confirmed, acknowledged and socially valued by the teacher through response and feedback, social signals and messages. The studies of Lyngstad et al. (2019) and Lagestad et al. (2019) instantiates principles that can be useful when attempting to give the student good experiences, positive self-efficacy and learning outcome in the subject. Lyngstad et al. (2019) suggest that it is important to establish good communication with the students to solve basic problems that may lead to difficulties, negative attitudes and even dropout from PE. They argue that good communication provides clues that help in developing ways of teaching that inspire enthusiastic participation rather than dissatisfaction, insecurity and dropping out.

Earlier studies of PE have thus pointed to the importance of pedagogical, content, pedagogical content and curriculum knowledge (Rovegno, 2003, Amade-Escot, 2000; Ward, 2009), while scholars also argue that PE teaching should be guided by phronetic knowledge (Barker-Ruchti, Barker & Annerstedt, 2014; Jones, 2017). Phronetic knowledge is in general an intellectual attribute that implies ethics and involves deliberation that is based on values, practical judgement and informed reflection (Kinsella & Pitman, 2012). It reflects interest in having an impact, focusing on authenticity and modesty. Jones (2017) and Standal and Hemmestad (2010) claim that a good teacher or coach in PE or sport must have phronesis, which is revealed in the ability to act correctly, not only in a technical sense, but more importantly in a moral sense. When teachers or coaches find themselves in a problematic, ethically challenging situation, for example, PE teachers who have phronesis will not appeal to predetermined, universal rules for the right actions (Standal & Hemmestad, 2010). Instead, they will approach the situation by soundly balancing between universal principles and insight into the particular characteristics of the situation. Phronesis also refer to the goals of the teacher or coach, namely the good of the student or athlete.

All in all, research shows that teachers use different forms of professional knowledge in their teaching: pedagogical, content, pedagogical content and curriculum knowledge. It is also proposed in the research literature that pathic knowledge and the ability to see and understand the student's situation, and acting in a pedagogically wise way (phronetic knowledge) are relevant elements in a discussion on a teacher's professional knowledge and practice in PE.

Briefly about the interview with Sandra

Sandra was interviewed at the end of the second year of upper secondary school. The overarching aim of the interview was to examine her experiences of the PE subject and her view on the teacher's teaching and assessment practice. Her interview was part of a research project comprising a total of 26 student interviews. Questions relating to PE goals and content, teaching methods and assessment, the class environment and the relationship to the teacher were organized in a semi-structured interview guide (Kvale & Brinkmann, 2009). Sandra's experiences of PE and relations with the teacher were illuminated in connection with all the main topics in the interview, but in particular under the topic "relations to the teacher". Here, Sandra was asked directly about her experiences of the teaching practice, assessment practice and the teacher's communication skills.

It is necessary to make some clarifications in connection with the interview with Sandra. We have not collected data from Sandra's teacher that can confirm her statements and our interpretation of her narrative. Nor have we attended Sandra's classes and observed the ways in which her co-students interact with her and her teacher's way of teaching. Moreover, we do not have insight into Sandra's or the teacher's lifeworld other than from an external position, and cannot make accurate statements about Sandra's problems and the teacher's pedagogical practice seen from Sandra's and the teacher's positions, as we are *not* them.

However, during our study – and in the writing of this text – we have worked our way towards insight into and more awareness of an essential theme (van Manen, 2002), which characterized the phenomenon that we saw in Sandra's narrative, and which was the focus of our study; the teacher's professional knowledge and practice in PE. We have applied general theory from the field of studies on professions and used literature where particularly Aristotelian perspectives on the concept of professional knowledge are discussed (Dunne 1993, Grimen, 2008; Kinsella, 2012; Kemmis, 2012). Our analysis has emerged from in-depth

thinking and writing activities centred on a phenomenon which stemmed from the interview with Sandra, but this was used to more scrupulous examination and related to teachers' professional knowledge and practice, where we especially used the concepts of *phronesis* and *praxis*. *Phronesis* and *praxis* are Aristotelian concepts of knowledge and are in particular related to professional *acting* (Dunne, 1993) in PE in our study.

Characteristics of professional acting that lead, or may lead, to change such as Sandra experienced

Below we will apply the knowledge concepts from Greek antiquity, *techne* and *phronesis*, as well as *poiēsis* and *praxis* to elaborate on the discussion and to examine how professional practice by teachers lead, or may lead, to change such as Sandra experienced – and reflected in the interview. Since antiquity the understanding of a bearer of knowledge and situations where knowledge is used has dwelt in a shadowland in the discussion on the concept of knowledge in general in society (Grimen, 2008). In the previous century the discussion on knowledge was revisited by Arendt (1958), Gadamer, (1960), Bernstein (1983), Flyvbjerg (1991) and Dunne, (1993), which influenced the position of *practical knowledge* in society and the actions of professionals in our contemporary time. In PE research several contributions have been published, which in particular have examined *phronesis* in the connection of practical knowledge PE teachers possess (for example Jones, 2017; Standal & Hemmestad, 2010; Kosma, Buchanan & Hondzinski, 2015; Andersson et al., 2018), while *praxis* has been less used. Similar ideas of practical knowledge have been examined in connection with professionalism in PE (Thorburn & Stolz, 2017) and professional development and identity (Lee et al., 2019; Armour et al., 2017; González-Calvo & Fernández-Balboa, 2018). In research on professions in general, Kinsella (2012) and Kemmis (2012), among other scholars, have contributed to discussions on both *phronesis* and *praxis*.

Aristoteles distinguished between *episteme*, *techne* and *phronesis* (Dunne, 1993). *Episteme* and *techne* are not specifically Aristotelian concepts, but belonged in the Greek tradition, whilst *phronesis* is a specific Aristotelian concept (Grimen, 2008). For Aristoteles, two types of practical knowledge existed in society: *techne* and *phronesis*. *Techne* means the ability to carry out different handicrafts in society, for example constructing buildings and bridges and making machines. *Techne* is thus not knowledge about something that is eternal and unchanging, as

episteme is, but about something that varies and changes. *Techné* is also knowledge about how things are made. *Phronesis*, on the other hand, is something different from the ability to make things: *Phronesis* is knowledge about how to achieve a good life through action. Using *phronesis*, a person is able to consider the things that lead to a good life. *Phronesis* is practical wisdom, and is unlike *techné* in the sense that when one makes something, the aim is not the action but the product (Kinsella, 2012).

The actions that are part of making things, i.e. *techné*, are *heterotelic* (Grimen, 2008). This means that the goal for these actions lies beyond the action itself, i.e. in what the actions lead to in the form of a product. When a person acts morally, i.e. with *phronesis*, it is rather the actions that are the goal. These actions are *autotelic*. The “good” actions, as implied by *phronesis*, are actions with an inherent goal, i.e. something good. *Phronesis* is the ability to assess how to act to promote what is good for individuals. The concept includes skills and practical acts, and not least the ability to assess situations and make judgments, as well as the ability to assess and make wise choices of actions. In the context of physical activity, Kosma et al. (2015) argue that the foundational assumption of *phronesis* is that people have the capacity to make decisions about how they want to live their lives, including the amount of time and energy they want to devote to being physically active relative to other uses of their time, through the exercise of their faculty of practical reasoning. *Phronesis* is centrally concerned with people’s conception of the good life for human beings and hence people’s values and moral reasoning. Kosma et al. add that the capacity for exercising practical reasoning grows stronger with experience, as one learns more about the possibilities given in the particular context of one’s culture, history and upbringing, among other major influences.

Aristotle also made an important clarification in relation to *phronesis* (Dunne, 1993). It is useful knowledge for all to know which procedures lead to what is good, not only to have knowledge about what is good, which does not necessarily prescribe good procedures for achieving what is good. Practical wisdom, ethical judgment or other expressions which may be used about *phronesis*, are related to fundamental perceptions of what is good or bad, right or wrong for humans, such as ideas about physical activity, health and the good life, but also important knowledge in practical life for humans, about what is good or bad, right or wrong on the way to health and the good life.

Poiēsis and praxis

Other concepts from Greek antiquity help to analyse a teacher's professional practice that leads to, or may lead, to the type of change that Sandra experienced. These concepts are *poiēsis* and *praxis* (Dunne, 1993, Kemmis, 2012). *Poiēsis* and *praxis* mean:

Poiēsis has to do with making or fabrication; it is activity which is designed to bring about, and which terminates in, a product or outcome that is separable from it and provides it with its end or telos. Praxis, on the other hand, has to do with the conduct of one's life and affairs primarily as citizen of the polis; it is activity which may leave no separately identifiable outcome behind it and whose end, therefore, is realized in the very doing of the activity itself (Dunne, 1993, p. 244).

The dividing line between *poiēsis* and *praxis* derives from what Aristotle sees as the prior distinction between the two kinds of activity in society; *making* and *acting* (Dunne, 1993). At the time of Aristotle, the essence of actions was not the same as how we understand actions today. The most important dividing line at the time of Aristotle was not between theory and practice, or knowledge or action, but between different forms of human activity – or work – and the type of knowledge that controlled these activities (Doseth, 2010). The most important difference was between the two forms of actions called *poiēsis* and *praxis*. *Poiēsis*, which is an instrumental action based on knowledge, methods and tasks, forms what may be called expertise. *Praxis* also refers to actions with a purpose, but is first and foremost a *practical reality* of how the good is understood (Kemmis, 2012). Knowledge about what the good is and how the good should be introduced in concrete situations does not, however, separate the two actions in *praxis*, the two actions mutually support each other in a dialectic process which moves towards *practical wisdom*.

At the same time, as *praxis* is realised (in action) in the world, guided by good intentions for individuals and humankind, it begins to change the world around it (Kemmis, 2012). The person who aims for *praxis* aims to be wise and prudent, but as it happens, *praxis* begins to affect the uncertain world in indeterminate ways. Consequences begin to flow, whether for good or bad. Those who act will then learn the result of their wisdom and prudence, as things may turn out as they hoped and intended, or they may turn out wrong.

As with *phronesis*, *praxis* is thus practical wisdom in acts which do not have external goals. *Phronesis* and *praxis* are moral and intellectual “goods” which are always *in action*, and which are fundamental for moral awareness in a *disposition* to do the right thing in the right place and time and in the right way (Jones, 2017). Here will consideration, reflection and judgment be important elements. It will thus be important to point out that for example *phronesis* in

professional practice for PE teachers first and foremost finds its relevance in situations where the teacher is acting and where the good principle comes into play.

But phronesis and praxis are not cognitive capacities that are at the teacher's disposal at all times (Grimen 2008), but are rather closely related to the teacher's actions and inextricably related to what the teacher does in the situations he or she is in. Phronesis, for example, is knowing what is good or bad in different teaching and communication situations with students, right or wrong, but also knowing how to act as a teacher for things to be good or right (Kemmis, 2012). Another issue is that phronesis or praxis are not the same as being smart or clever (Grimen, 2008). People may be smart and demonstrate cleverness and have much knowledge about procedures for reaching particular goals, but if these goals do not serve the purpose of good, the smartness and cleverness are not phronesis or praxis.

Heterotelic and autotelic acts

According to Grimen (2008), the professional practice of a PE teacher consists to some extent of heterotelic acts, or techne. This means that the practice has the intention of promoting learning outcome in the students. Teachers formulate teaching goals, its content, ways of working and assess the students' preconditions for learning. They intend to create, support or correct the students' learning processes with their teaching. The practice of the profession functions in the best interests of the students and aims to serve the goals of PE. Professional knowledge and practice in PE also involves autotelic acts, in other words phronesis and praxis. This also means being open to the student on the individual and personal level. PE teachers organize the PE teaching and facilitates for learning processes for the student, but to succeed in this, the teachers must have the ability to understand the students' situation in PE, and for example see the student's needs (Lyngstad et al., 2019; Lagestad et al., 2019). The teacher needs to analyse factors which may influence the students' well-being and motivation and assess the students' interests and preconditions for learning. This is not unlike Sandra's perception of her teacher's way of acting. Her teacher was helpful for her in a social situation that was difficult for her. Phronesis, praxis and autotelic acts in Sandra's teacher's professional practice are here understood as moral and intellectual "goods", which existed in the teacher's acts, and which were fundamental for a moral awareness in a disposition to do the right things in the right place and time and in the right way for Sandra in her situation. Practical wisdom and judgment were

given room and function in the best interest of Sandra's development, seen from the student's point of view and with openness for important individual nuances, hence a knowledge which has a *pathic* focus particularly on seeing her situation (Standal, 2015, Lyngstad et al., 2019; Lagestad et al., 2019).

Autotelic acts in PE teaching is thus also associated with pathic knowledge, which is a form of intersubjective relationship between teacher and student and knowledge related to sympathy and empathy (Standal, 2015). Pathic knowledge in PE is based on the student's experiences in teaching situations, and if a teacher develops pathic knowledge this will help him or her to give assistance to the students, as mentioned earlier. Moreover, the concept of autotelic acts correspond with research that reveals that the student's feeling of being seen by their teacher in PE classes is achieved through being confirmed, acknowledged and socially valued by the teacher through response and feedback, social signals and messages (Lyngstad et al., 2019; Lagestad et al., 2019).

Heterotelic and autotelic acts as fruitful concepts in relation to professional knowledge and practice in PE

To further discuss heterotelic and autotelic acts as fruitful concepts in relation to Sandra's teacher's professional practice in PE - as well as to PE teaching many times - we will take a closer look at the knowledge base of professional practice in PE. Here we use a system of concepts which allows us to state something about the uniformity of the knowledge base and also about the differences between its various elements. This will help to understand the connection between especially autotelic acts and a discussion about theory and practice in the professional knowledge in PE. The key concept in this system of concepts is *practical syntheses* (Grimen, 2008). Practical syntheses in professional knowledge have their origin in analyses which show that the knowledge base for many professions has a uniformity due to the need to carry out specific tasks that are part of the professional work area. For the teaching profession this means that the professional practice rests on a knowledge base that includes knowledge from different scientific fields including communication knowledge at one and the same time. This also means that the nature of the teacher's professional tasks, for example in PE, determines which knowledge elements that need to be linked in the professional practice to

solve the tasks a teacher is facing. Thus, we claim that there are practical syntheses in the knowledge base of Sandra's teacher's practice in the situation wherein Sandra was helped by her teacher, due to what first and foremost integrates the elements in the professional practice are the challenges the teacher is facing in the professional work field, which in this particular case was a difficult social situation for Sandra.

The most important argument for claiming that the knowledge base for professional practices is composed of different knowledge elements is that the professional practice in most cases requires the application of knowledge from many fields (Grimen, 2008). Professional knowledge is in general in society constructed of many – and partly highly different – knowledge elements. The knowledge draws on scientific disciplines but is not the same as the knowledge in a scientific discipline. It is more diverse. One of the reasons why the knowledge base of professions is basically theoretically fragmented is that it is composed of elements from different knowledge fields, Grimen (2008) argues. Another argument is that professional practice, at least in so-called client-oriented professions such as the teaching profession, usually has a practical and not a theoretical purpose. Theoretical reflection and attempts to find theoretical connections are not normally the focus of professional practice. Instead professional practice is focused on solving practical tasks, and often in the best interest of the clients. A third argument is that the knowledge base is fragmented because most people working in a profession are relatively far from the research front in the scientific disciplines that are the origins of these respective professions. Therefore professionals do not possess updated knowledge from the research fields that relate to their profession. A more detailed understanding of the special characteristics of professional knowledge and practice must thus come from studies of how scientific knowledge is most likely imparted from the research front to those who are to apply this knowledge in professional practice.

Another important dimension in the discussion of professional knowledge in PE teaching is that even if the professional knowledge is generally understood as practical syntheses, it is hardly possible to understand the knowledge as “purely” practical knowledge. The knowledge also includes and connects theoretical insights from several fields. It could be envisioned, for example, that many PE teachers have ties to their profession through a connection to a theoretical discipline or have a knowledge domain that is the basis for the profession. Many professionals may be interested in studying in-depth the abstractions and theories which the community of professions they are members rely on (Lahn & Jensen, 2008). It could for example be that many PE teachers have an interest in studying the knowledge about sports physiology without any thoughts of transforming and applying such insights from this field in

their educational practice. This insight may still become part of the professional knowledge of these teachers.

However, we will argue that we will not see many situations where theoretical disciplines or domains permeate the professional field for PE teachers, taking over the practical domain in their professional work. It is difficult to disregard this practical dimension. Teachers' professional knowledge in PE is related to the person who is bearing the knowledge and to the situations it is used in. PE teachers' professional knowledge is embedded in practical-pedagogical knowledge about what should take place in PE classes, and resides in the teachers who instruct and encourage students to undertake numbers of learning activities while teaching and guiding them. Previous research has examined how this knowledge has a bodily and physical dimension and is expressed through practical motor skills, as well through skills of instruction, teaching and communication (for example Rovegno, 2003; Tsangaridou, 2006; Quennerstedt & Maivorsdotter, 2017; Parker & Patton, 2017). The knowledge may be expressed at times through specific sports skills which are composed of different movement elements, and at times in accordance with specific standards for the sports in question, or in free forms of movement which are more adapted to a more open norm for bodily movement, such as in team sports and dance (Lyngstad, 2013). This is also expressed in outdoor-life skills, which are also part of the PE subject in some countries.

Our contribution to understandings of the PE teacher's practice in this theoretical field of PE pedagogies is thus that these PE skills are related to heterotelic and autotelic acts and communication abilities, and are performed as entities in the teaching practice. The teachers aims at influencing on the student's learning and facilitate the learning process and they will use a range of knowledge, including pedagogical, content, content pedagogical and curriculum knowledge (Shulman, 1986), as well as *techne*, *phronesis*, *praxis* and communication skills so that learning can be achieved for the student.

The professional knowledge in PE moves along a continuum between theory and practice

There is a danger that a discussion on professional knowledge in PE will bog down at some point or other if the goal is to find one specific relationship between theory and practice in the knowledge. The main reason for this is that the definition of professional knowledge in discussions of this type is easily detached from a situational component, i.e. it is detached from

the idea that the knowledge functions in different and specific situations for a profession. There is also reason to assume that both theory and practice are understood as only one entity, not several, and this makes things difficult (Grimen, 2008). A discussion aiming to arrive at a particular understanding of the relationship between theoretical and practical knowledge elements in professional knowledge in PE may have a reductionist effect by forcing the production of simplified ideas and models of the relationship between theory and practice in the professional knowledge. A better approach is to open to the idea that theory and practice can be a number of things, i.e. that there may be several types of connections between theory and practice. For example, it may prove fruitful to discuss whether the professional knowledge of Sandra's teacher moves along a continuum between theory and practice depending on which situations the teacher's knowledge functions in and which tasks are to be solved.

Grimen (2008) argues that the long-standing discussion on the concepts of theory and practice in research on professions has led to a point of view which claims that neither theory nor practice is uniform. Theory and practice are several things. According to Grimen (2008), the reason is that research in different science traditions in society has produced different understandings of the connections between theory and practice. The theory-practice link for the empirical-analytical sciences, for example, is expressed through technology, while for the historical-hermeneutical sciences this link is expressed through improved communication. For the so-called liberating sciences, the theory-practice link is stated in enhanced self-understanding and detachment from illegitimate power (Grimen, 2008, p. 75). Thus, different practice concepts belong to different types of science. In the first case, practice transforms natural laws into rules so one can act to satisfy a goal, in the second, the practice is communication between people to achieve shared understanding of situations, while in the third, practice is different forms of (liberating) self-reflection.

However, the profession of teaching crosses all these boundaries. It has a knowledge base that comprises technology, science-based knowledge and communication all at once. The teacher's professional knowledge includes theoretical elements from several sciences, and many types of practical knowledge. A teacher in PE, for example, must be able to unite knowledge from several sciences, while this must also be combined with knowledge about teaching methods, communication and guidance – and also social interaction and care, which in turn can be carried out in different ways.

Opens the discussion and contributes to fruitful directions for in-depth analyses

In our discussion, we have pointed out that professional knowledge and practice in PE consists of heterotelic and autotelic acts. Professional knowledge is also to know why some professional actions are better than others. Furthermore, we have argued that the knowledge base for professional practice in PE is diverse and dynamic. A fruitful view of professional knowledge is that it moves along a continuum between theory and practice depending on which situations the knowledge functions in and which tasks must be solved. Moreover, studies of professions in general present good arguments for placing the interaction and tensions between theory and practice also in the PE teacher's professional knowledge in focus (Grimen, 2008). In studies of professional knowledge in PE, the point is, however, to avoid simplified ideas and models, such as that practice is merely transformed theory, or on the other extreme, that there are no genuine theoretical insights, only variants of practice, or third that there is only one link between theory and practice. Such notions are to some extent reductionist, and are for the most part unproductive in further studies of professional knowledge and practice in PE. The concept of practical syntheses avoids such reductionist effects and is constructivist. It opens up the discussion, giving additional fruitful directions for in-depth discussion on for example phronesis, praxis and autotelic acts. It also opens for constructive discussion and development, which are given through being open for interpretations by others in similar social situations the teacher is in, so that, for example, a situation involving social exclusion in PE class may be understood and dealt with for the student in question.

Furthermore, understanding phronesis, praxis and autotelic acts in the PE teaching from more sides, as we have done in our study, opens for a comprehensive understanding of professional knowledge and practice in PE. If we look at phronesis, it is basically a suitable concept for understanding the professional practice of teachers in relation to the teacher's personal professional self-understanding and identity formation (Kinsella & Pitman, 2012; Kosma et al., 2015). But in another context it is also suitable for understanding how professional knowledge and acting in PE includes an ability to assess what is good for students and their learning process, suitable for their further development in the subject and an appropriate way of acting with the students. Professional knowledge and acting in PE thus means having a direction for the knowledge which is clear and unequivocal for the teacher him- or herself and beyond the teacher to the students.

Conclusion

Our analysis started with Sandra's story. It was created through a reflection on the painful feeling of social exclusion she experienced, and in a closer analysis of Sandra's statement that the teacher was "really, really helpful". The analysis was also inspired by the term phronetic knowledge in teaching, an intellectual attribute that applies ethics and involves deliberation that is based on values and concerned with practical judgement and professional wisdom. We argue that Sandra's story reflects a standard in the teacher's professional practice that exceeds the teacher's pedagogical, content, pedagogical content and curriculum knowledge in PE teaching. We have analysed Aristotelian perspectives of professional knowledge PE, especially phronesis and praxis in relation to Sandra's story. We also argue that Sandra's story implies a narrative about autotelic acts, which is closely connected to phronesis and praxis. Moreover, we argue that the concept of practical syntheses in the knowledge base for the PE teacher's professional practice opens up the discussion, giving additional fruitful directions for further research on Aristotelian perspectives on professional knowledge in PE. Practical syntheses avoid reductionist effects. Here we took a closer look at the knowledge base for professional practice in PE and found arguments for using autotelic acts in relation to a PE teacher's practice. Furthermore, professional knowledge and practice that includes phronesis, means the ability to assess how to act to promote what is good for each teacher and make wise choices of actions, but it also means a direction for the knowledge which is clear beyond the teacher to the students, who all in all are the main objects for the teachers' professional practice.

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